
Two New Brazilian Species of *Oryctina* (Loranthaceae) with a Revised Key to the Genus

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ABSTRACT. Two new species from central Brazil of the South American genus *Oryctina* (Loranthaceae) are described and illustrated, *O. eubrachioides* Kuijt and *O. quadrangularis* Kuijt. The absence of a calyculus in the male flower of several *Oryctina* species represents a nearly unique feature within the family, and the lack of staminodia in the female flower has elsewhere been noted only in two species of *Cladocolea*. The affinities of Brazilian species with Venezuelan ones are briefly discussed. Distinctions between the two groups of species, based largely on the structure of bracteoles and staminodia, suggest that the generic name *Maracanthus* may have to be revived for the Venezuelan species. A new key to the genus is presented, including the new species.

In recent years, the South American genus *Oryctina* (Loranthaceae) has significantly swelled from its original monotypic status (Kuijt, 1991). The genus currently consists of six species, but recent collections have brought to light two more, distinctive Brazilian species. Both are herein described and illustrated, and followed by some general comments on the genus, including a new key to all species now comprising *Oryctina*.

Oryctina is one of 16 hemiparasitic genera of Loranthaceae, all of which are strictly limited to the New World. This group of genera may consist of two distinct lineages as indicated by flower size and other features, *Oryctina* being part of the small-flowered group also containing the better known and larger genera *Phthirusa* and *Struthanthus*. Nearly all New World Loranthaceae possess an inconspicuous calyculus directly below the 4 to 6(7) petals. The frequently minute flowers and, upon occasion, the much contracted inflorescences, have in the past posed considerable challenges to the taxonomic interpretation of some of these genera.

***Oryctina eubrachioides* Kuijt, sp. nov.** TYPE: Brazil. Minas Gerais: Januária, Vale do Peruçu, início do Cerrado de Judas, 15°7'10"S, 44°13'21"W on *Aspidosperma*, *Salino & Gotschalg* 4037 (holotype, BHCB not seen; isotype, LEA). Figures 1, 2.

Frutex dioicius, squamatus, gracilis; internodiis ad 1.5 cm longis, teretibus. Folia ad 1.5 mm longa, cucullata peltata. Spicae paene sessiles, ca. 4 mm longae.

Squamate plants, sparsely branched, the branches very slender, stiff, internodes to 1.5 cm long, terete, covered with innumerable raised stomata forming conspicuous, minute tubercles. Leaf-scales about 1.5 mm long, strongly cucullate and peltate, fringed with dark brown hairs, the adaxial surface also with brown hairs, hairs becoming white with age, leaf-scales paired but in threes on vigorous shoots. Dioecious, the inflorescences nearly sessile, about 4 mm long at anthesis, in the male plant often some 20 pairs in series on an unbranched shoot, mostly singly in the axil of scale-leaves, sometimes with a second, smaller, superposed inflorescence; peduncle somewhat less than 1 mm, followed by up to 10 pairs of brown-fringed, minute scale-leaves, each subtending a bright lemon-colored bud or flower, the mature bud ca. 1 mm diam., globular, flanked by 2 laterally placed, very inconspicuous, blunt, hair-fringed prophyllar bracteoles. Petals 6, strongly dimorphic in both sexes, the longer ones 1 mm long, shorter ones ca. 0.5 mm. Male flower lacking a calyculus, anthers ca. 0.25 mm, globular but slightly bilobed, bilocular, sessile on the middle of the petals; style 0.5 mm long, cylindrical, stigma not differentiated. Female flower 1.5 mm long when mature, half of which is ovary, calyculus distinct, petals without staminodial remnants, style to 0.5 mm long, cylindrical, stigma slightly differentiated as a terminal swelling, very slightly papillate. Fruit at least 3 × 1.5 mm, ellipsoid but with a somewhat expanded calycular region, blunt-tipped.

The specific name indicates a striking general similarity to the genus *Eubrachion* (Eremolepidaceae), a similarity that is carried through to the more or less peltate scale-leaves (see the illustration in Kuijt, 1988, fig. 2d & e). In the present species, however, the scale-leaves are profusely fimbriate, which is not true for *Eubrachion*. The partial base of the plant included in the LEA specimen cited below suggests that no epicortical roots are present in *O. eubrachioides*. The occurrence of such roots and/or their placement on the plant in

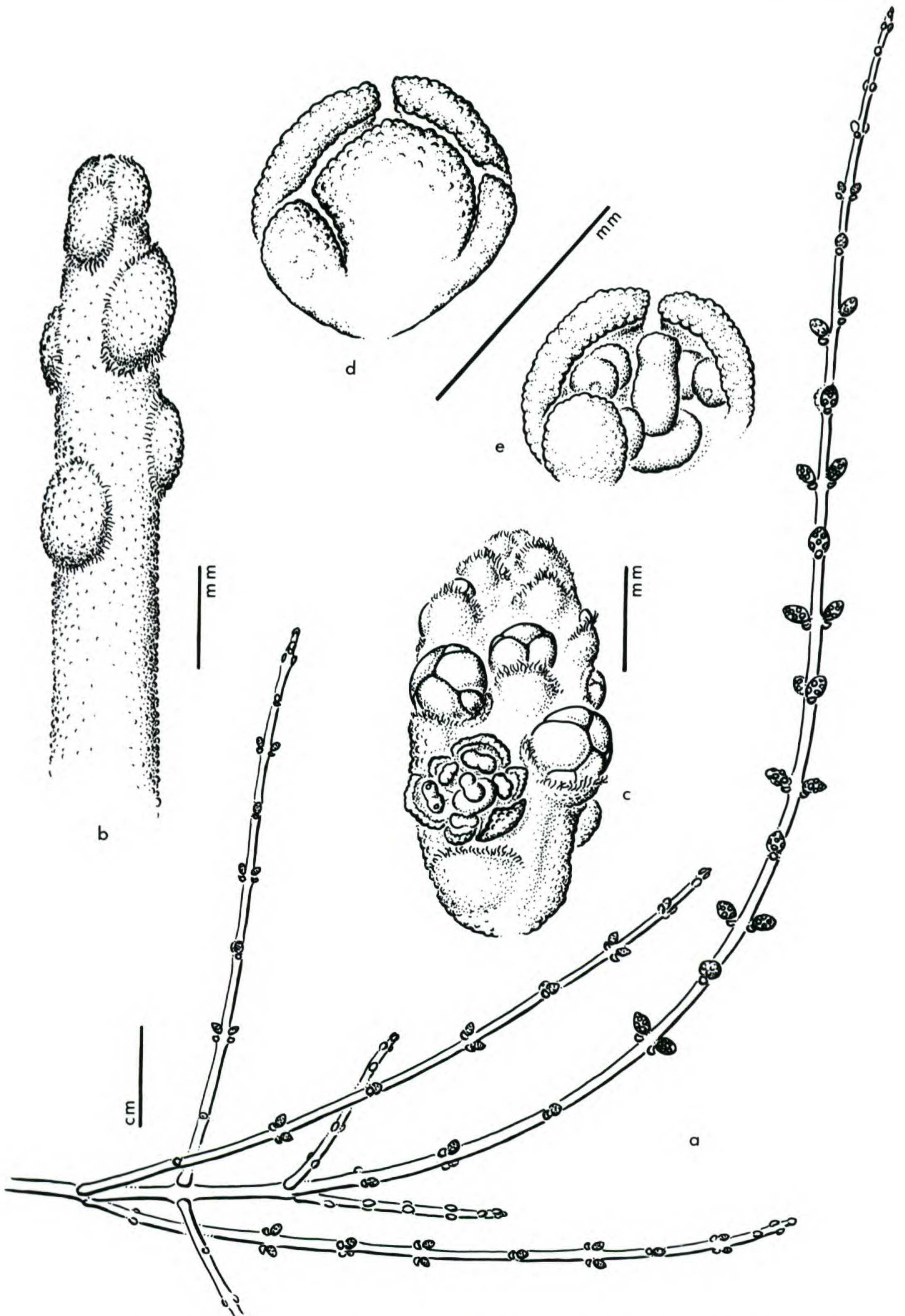


Figure 1. *Oryctina eubrachioides* Kuijt, Salino & Gotschalg 4037 (LEA). —a. Habit, with mature fertile branch ascending at right. —b. Young shoot tip, showing fringed scale-leaves. —c. Inflorescence. —d. Male bud, showing five of the six petals; note absence of calyx. —e. Male flower, partly dissected to show three petals, their anthers, and the rudimentary style.

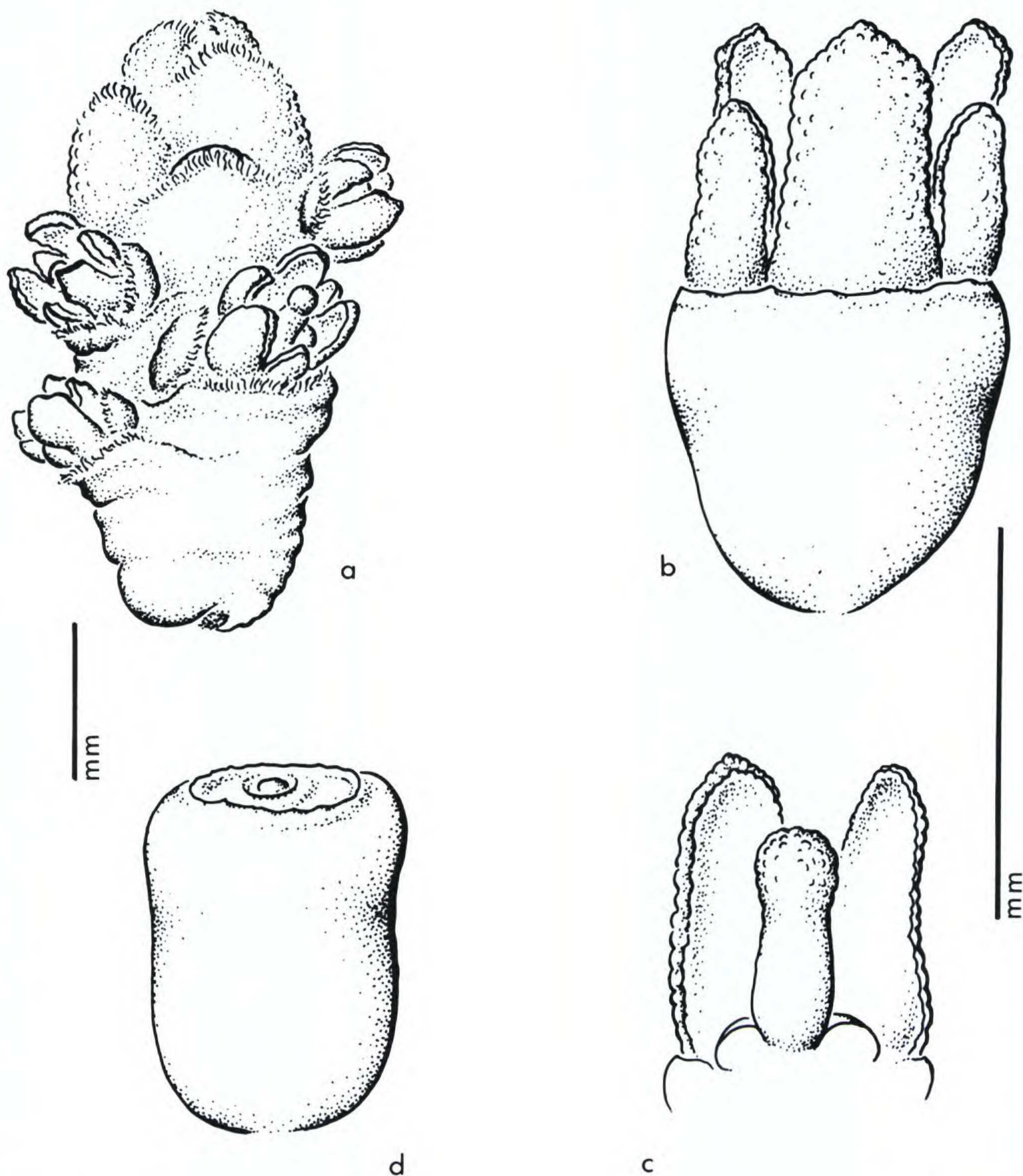


Figure 2. *Oryctina eubrachioides*, Salino & Stehmann 3304 (LEA). —a. Female inflorescence. —b. Female bud, showing five of the six petals. —c. Female flower, partly dissected. —d. Fruit.

other small-flowered neotropical Loranthaceae frequently provide important taxonomic distinctions.

The diagnostic features of *O. eubrachioides* consist of the combination of an extremely attenuate habit, the peculiar, fringed peltate scale-leaves, and the absence of a calyculus in the male flower.

Paratype. BRAZIL. **Minas Gerais:** Januária, Vale do Rio Peruaçu, Cerrado do Judas, Salino & Stehmann 3304 (BHCB, LEA).

Oryctina quadrangularis Kuijt, sp. nov. TYPE: Brazil. Minas Gerais: Januária, Vale do Peruaçu,

carrascal próximo da entrada para Fazenda Terra Brava, 15°6'45"S, 44°15'36"W, Salino & Gotschalg 4009 (holotype, BHCB not seen; isotype, LEA). Figure 3.

Plantae foliosae, dioicae; caulibus quadrangularibus; internodiis ad 2 cm longis. Folia ad 20 × 8 mm, elliptica. Pedunculi ca. 7 mm longi, quadrangulares.

Small, branched plants with rather stout, strongly and persistently quadrangular internodes to 2 cm long, the stem ridges callused even when young and becoming light-colored, the stomata crowded and

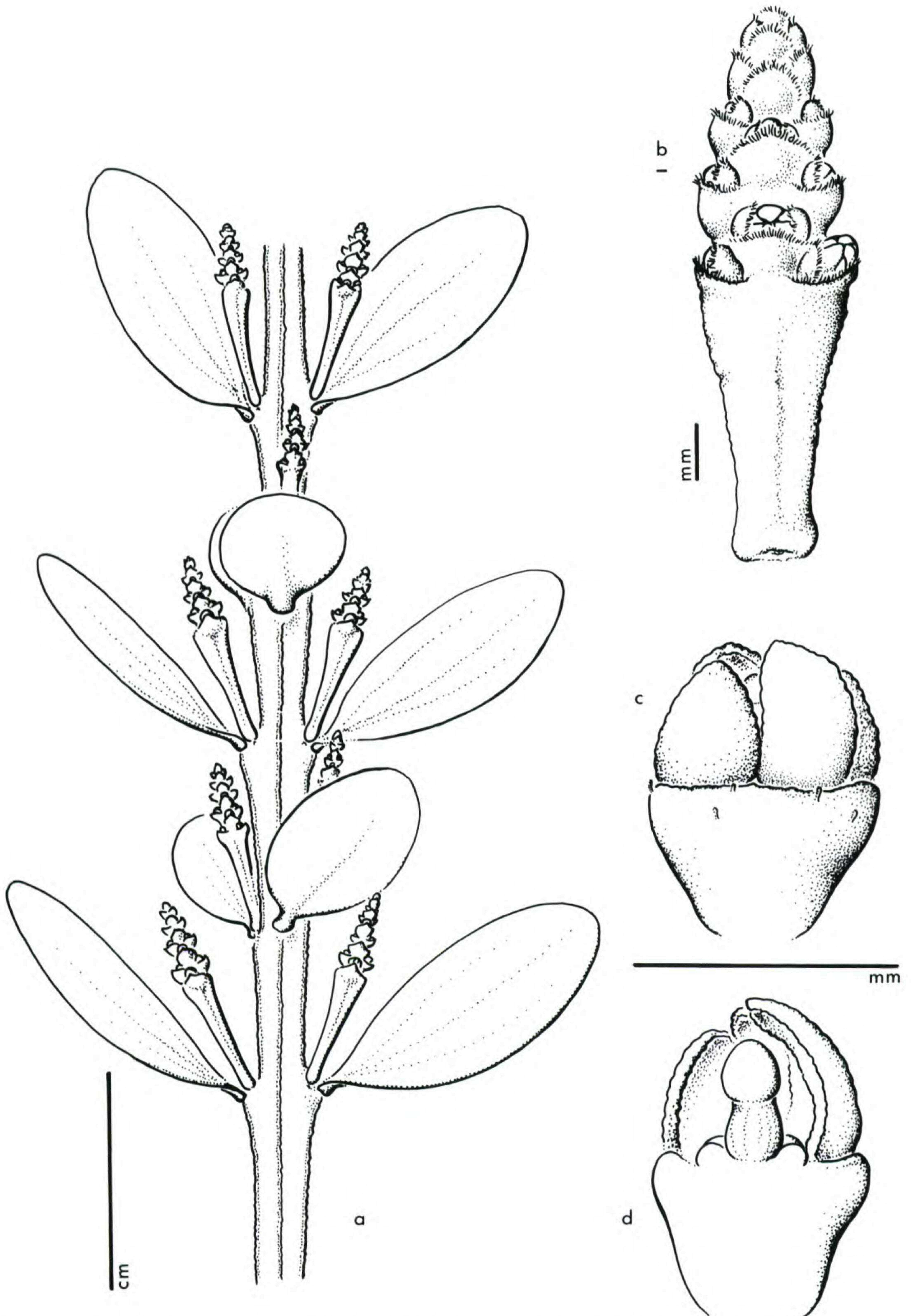


Figure 3. *Oryctina quadrangularis* Kuijt, Salino & Gotschalg 4009 (LEA). —a. Habit. —b. Female inflorescence. —c. Female bud. —d. Female flower, partly dissected, showing three of the six petals and the style.

raised as minute tubercles. Leaves to 20×8 mm, elliptical, apex and base obtuse, petiole 1 mm, venation with 3 or 5 palmate, rather obscure veins; leaf surface similar to stem surface; axillary region of stem and petiole with brown hairs. Inflorescence at least 12 mm long (immature), peduncle ca. 7 mm long, strongly quadrangular or compressed, expanding distally, the fertile portion bearing at least 10 pairs of scale-leaves fringed with brown hairs, each scale-leaf subtending a single, sessile flower flanked by two lateral, broad and obtuse prophyllar bracteoles. Dioecious, the type female. Mature bud 1 mm long and nearly as broad, \pm ovoid; ovary half the size of the bud; petals dimorphic, the larger ones 0.5 mm long, the others somewhat shorter; staminodial remnants absent. Style as long as shorter petals, cylindrical, the upper half a distinct, ovoid stigma. Fruit unknown.

The only collection (other than the type) of *O. scabrida* (Eichler) Tieghem ever recorded, to my knowledge, was made in 1973 (Anderson 6881, Brazil. Goiás: 25 km SW of Monte Alegre de Goiás, LEA, NY, RB). However, I now consider this an erroneous assignment, and include this collection under the present species on a provisional basis. The internodes of *O. scabrida* are "only very slightly quadrangular" and soon become terete (Kuijt, 1976b), while those of *O. quadrangularis* are strongly and persistently so. Additionally, the inflorescence peduncle of the only reliably known collection of *O. scabrida* is clearly terete and slender, and relatively young, and its leaves are much more slender than those of *O. quadrangularis*. However, the near absence of the striking, marginal hairs on all young scale-leaves of the Anderson collection contrasts with the latter, cautioning me to cite that collection here in a provisional way only.

DISCUSSION

The genus *Oryctina* is closely related to *Cladocolea* (Kuijt, 1975, 1992), differing in the mostly determinate inflorescences and ebracteolate flowers of the latter. The genus *Oryctanthus*, also closely related to the present genus, consistently differs from all other small-flowered genera of Loranthaceae in having a unique pollen structure (Feuer & Kuijt, 1985), stellate fiber bundles in the leaf (Kuijt, 1976b), and strap-shaped floral bracteoles.

In the female flowers of Loranthaceae thus far described, with the exceptions of *Tupeia antarctica* (J. G. A. Forster) Chamisso & Schlechtendal (Kuijt, 1969, fig. 2–10h), *Cladocolea coriacea* Kuijt (Kuijt, 1987), as well as *Oryctina scabrida* and *O. subaphylla* C. T. Rizzini (Kuijt, 1981), staminodial rem-

nants are always present. The new species present us with further examples of lacking staminodial remnants. We may anticipate, again in parallel with Viscaceae (see Kuijt, *Phoradendron*, in prep.), and also like *O. eubrachioides* and *O. subaphylla*, that an aborted style will be present in the male flower of *O. quadrangularis*.

The calyculus in Loranthaceae has been much debated, and is generally regarded as a greatly reduced calyx. It normally exists as an inconspicuous rim of tissue directly below the perianth, and is diagnostic of the family. In a single species of Loranthaceae, *Tupeia antarctica* from New Zealand, the male flower lacks a calyculus, while this structure is present in the female (see Kuijt, 1969). Rizzini (1977) observed the absence of a calyculus in *O. subaphylla*, but implied that this applied also to female flowers. It is of great interest, therefore, to discover another species, *O. eubrachioides*, also lacking a calyculus in the male flower while possessing it in the female flower. The generally reduced condition of this species strongly suggests that we can regard this as a reductional phenomenon. It might be added that the male flowers of the genus, especially those of *O. eubrachioides* and *O. scabrida*, are probably the smallest flowers in Loranthaceae, even in the small-flowered neotropical group. Unfortunately, no male flowers of *O. quadrangularis* are available but they, also, likely lack a calyculus.

Even though the four known Brazilian species, all clearly closely related, are inconspicuous plants and easily overlooked in the field, their rarity invites comment. The generic type *O. scabrida* was collected in 1840 and may still constitute the only authentic preserved material. One of the species here newly described (*O. quadrangularis*) is known only from the type collection; the other, *O. eubrachioides*, is known from just two collections, both from the Januária region in Minas Gerais. The second species to be described in the genus, *O. subaphylla* in 1977, is with certainty also known from only two specimens, the type and Pirani 1837 (LEA). A third specimen, Pirani et al. 1951 from Dianópolis, 10 km from Taipas near Morro da Cabeça Branca (Serra do Ouro), Goiás (LEA, SPF), is here also provisionally assigned to *O. subaphylla*. It thus seems clear that the four Brazilian species are rare and highly localized species, and concentrated in a very small area of central Brazil.

The information presented in the present paper increases the systematic cohesion of the Brazilian species cluster but simultaneously distances them from the other four *Oryctina* species (*O. badilloi* (Ferrari) Kuijt, *O. myrsinites* (Eichler) Kuijt, *O.*

chlamydata (Rizzini) Kuijt, and *O. pedunculata* (Kuijt) Kuijt). These four species occur in Venezuela and the Guianas, at least 1800 km to the northwest of Brazilian taxa. In the first two species, *O. badilloi* and *O. myrsinites*, flowers are bisexual. However, *O. chlamydata* and *O. pedunculata* are dioecious plants (Kuijt, 1976a). Even in these dioecious species, the staminodia in female flowers are unusually large and very different from Brazilian *Oryctina* species. Furthermore, all flowers of the four species from northwestern South America have distinctive calyculi. Finally, the shape of their bracteoles, consistent at the generic level in neotropical Loranthaceae (for example, *Oryctanthus*, Kuijt, 1976b), is quite different from those in Brazilian species. In the four species found outside Brazil, bracteoles are conspicuous, relatively large, triangular or naviculate structures. These bracteoles are included in the floral cavity, and not very different from small scale-leaves elsewhere on the plant. In the Brazilian species, bracteoles are very low crests placed on the rims of the floral cavities and extremely inconspicuous. It is possible that, as more information becomes available, the generic name *Maracanthus* Kuijt will need to be revived for the four western species, even if only at the subgeneric level. Consequently, it is conceivable that a stricter diagnosis of the genus *Oryctina* will focus on the absence of the calyculus in the male flower, the lack of staminodial remnants in the female flower, the shape of the floral bracteoles and anthers, as well as its geographic distribution.

Oryctina subaphylla Rizzini, *Plant Syst. Evol.* 128: 51–52. 1977. TYPE: Brazil. Bahia: near Espigão Mestre (or Serra Geral), Mar. 14 1972, W. R. Anderson *et al.* 36949 (holotype, RB; isotype, NY)

Oryctina piranii Rizzini, *Rev. Brasil. Biol.* 51: 460–461. 1991. Syn. nov. TYPE: Brazil. Goiás: Chapada dos Veadeiros, Rodovia 118, near Rio das Almas, between Teresina ad Alto Paraíso, *Pirani et al.* 1837 (holotype, RB; isotypes, K, LEA, NY, SPF).

KEY TO THE SPECIES OF *ORYCTINA*

1a. Leaves longer than 3 cm or, at least, more than ½ as wide as long; flowers bisexual or unisexual and then the female flowers with conspicuous staminodia; floral bracteoles naviculate, placed inside floral cavities; French Guiana to western Venezuela.

2a. Anthers lacking papillate connective horn, but with 2 pollen sacs; spike sessile, 3 mm long or less, bracts and bracteoles deciduous; leaves with conspicuously furfuraceous lower midribs *O. myrsinites*

- 2b. Anthers and staminodia with prominent, papillate connective horn, the anthers with 4 pollen sacs; spike peduncles at least 2 mm long, bracts and bracteoles persistent; leaves lacking furfuraceous lower midribs.
- 3a. Plants sympodial; twigs and leaf margins smooth but twigs with small lenticels, terete; bracts with hyaline margins *O. chlamydata*
- 3b. Plants percurrent; twigs and leaf margins furfuraceous, but twigs quadrangular; bracts lacking hyaline margins.
- 4a. Flowers bisexual, usually fewer than 10 per spike; peduncle < 0.5 cm long; spike emerging from a strongly developed corky crater *O. badilloi*
- 4b. Flowers unisexual, to 50 per spike; peduncle at least 1 cm long; spike lacking basal crater *O. pedunculata*
- 1b. Leaves less than 3 cm long, and less than (½) ½ as wide as long; flowers unisexual (or assumed so), the female ones lacking staminodial remnants; floral bracteoles low crests on rim of floral cavities; Goiás, Bahia, and Minas Gerais.
- 5a. Leaves scale-like or shield-like, with peltate attachment, and entirely fringed with brown hairs *O. eubrachioides*
- 5b. Leaves not as above.
- 6a. Inflorescence sessile or nearly so, the peduncle no more than 1 mm long *O. subaphylla*
- 6b. Inflorescence pedunculate, the peduncle 7 mm or more (about ½ as long as the entire inflorescence).
- 7a. Internodes and peduncles quadrangular *O. quadrangularis*
- 7b. Internodes and peduncles terete *O. scabrida*

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